

ABSTRACT

5 **Lithographic Apparatus, Integrated Circuit Device Manufacturing Method,
 and Integrated Circuit Device Manufactured Thereby**

 A microphone or other acoustic sensor is used to detect sound or other vibrations
caused by the passage of pulses of radiation of a projection beam. The measured vibrations
may be used to determine the intensity of the projection beam or the presence of
10 contaminants. The vibrations are caused by absorption of the beam pulses in an absorptive
gas or by objects, *e.g.* the substrate or mirrors in the projection lens, on which the projection
beam is incident.

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